DOCUMENT RESUME

ED 402 441 CE 073 076

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TITLE Assessing School to Work Transitions in the United States. National Longitudinal Surveys Discussion Paper.
INSTITUTION Bureau of Labor Statistics, Washington, DC.
REPORT NO NLS-96-32
PUB DATE Jun 95
NOTE 43p.; Prepared for presentation at the Siena Group Meeting on Social Monitoring and Social Exclusion: The Case of the Youth (Oslo, Norway, June 8-9, 1995).
AVAILABLE FROM Bureau of Labor Statistics, Office of Economic Research, Washington, DC 20212-0001.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Data Analysis; Educational Attainment; Educational Opportunities; Educational Quality; *Education Work Relationship; Evaluation Criteria; *Evaluation Methods; Family Characteristics; *Information Needs; *Longitudinal Studies; Measurement Techniques; National Surveys; Predictor Variables; Racial Differences; *Research Methodology; Sex Differences
IDENTIFIERS *National Longitudinal Survey of Youth

ABSTRACT

Issues related to assessing school-to-work transitions in the United States were discussed in the context of selected findings from the National Longitudinal Survey of Youth (NLSY), a longitudinal data set characterizing 9,964 of 12,686 of young people who were 14-22 years old when first interviewed in 1979. The first section of the paper describes the NLSY. The middle section presents the measurement issues and accompanying analyses. Specific examples examined include whether to measure outcomes by year out of school or by age, looking specifically at weeks worked and weeks unemployed; when to measure the beginning of the career, the pitfalls in using the current measures available in prospective data collection, and issues regarding defining a successful transition. The final section of the paper discusses the data necessary to support the types of analyses presented in the earlier sections and data for assessing school-to-work transition. A new data set being started in the United States is described which attempts to meet the needs suggested in this paper. (Twelve tables and 22 references are included.) (MN)

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ED 402 441

National Longitudinal Surveys

U.S. Department of Labor
Bureau of Labor Statistics

Discussion Paper

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Bureau of Labor Statistics

June 1995

Report NLS 95-32

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Assessing School to Work Transitions in the United States

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June 1995

Prepared for presentation at the Siena Group meeting on Social Monitoring and Social Exclusion: The Case of the Youth, Oslo, Norway, June 8-9, 1995. The views expressed are those of the author and do not reflect the policies of BLS or the views of other BLS staff members.

Abstract:

The transition from school to work is very smooth for some youth and less smooth for others. Many factors influence the transition such as the level of education, the quality of schooling, intelligence, opportunities, and family background. This paper addresses several measurement issues related to the assessment of the school-to-work transition. To illustrate these issues, several existing findings from the National Longitudinal Survey of Youth (NLSY) are discussed. Each finding relates to alternative measures or methods employed to assess the school-to-work transition in the U.S. Conclusions are drawn regarding the data necessary to support the assessment of the school-to-work transition, including a new survey beginning in the United States which attempts to meet these requirements.

Assessing School to Work Transitions in the United States

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The transition from school to work is very smooth for some youth and less smooth for others. Many factors influence the transition such as the level of education, the quality of schooling, intelligence, opportunities, and family background. This paper addresses several measurement issues related to the assessment of the school-to-work transition. To illustrate these issues, several existing findings from the National Longitudinal Survey of Youth (NLSY) are discussed. Each finding relates to alternative measures or methods employed to assess the school-to-work transition in the U.S. Wherever possible, the findings are compared for high school dropouts and high school graduates.[1]

The first section of the paper describes the NLSY. The middle section presents the measurement issues and accompanying analyses. Specific issues examined include whether to measure outcomes by year out of school or by age, looking specifically at weeks worked and weeks unemployed; when to measure the beginning of the career, looking at how much youth work while in school; the pitfalls in using the current measures available in prospective data

[1] Several of the studies used in this paper included results for those who attended some college and college graduates. Those findings are not reported here to narrow the discussion to the groups of most concern to policy makers.

collection; and issues regarding defining a successful transition. The final section of the paper discusses the data necessary to support the types of analyses presented in the earlier sections and for assessing the school-to-work transition. A new data set being started in the U.S. is described which attempts to meet the needs suggested in this paper.

I. The National Longitudinal Survey of Youth (NLSY)

All analyses discussed in this paper use data from the National Longitudinal Survey of Youth (NLSY), sponsored by the U.S. Bureau of Labor Statistics. The NLSY is a longitudinal data set of young people who were 14-22 years old when first interviewed in 1979. The original sample of 12,686 included oversamples of blacks, Hispanics, economically disadvantaged whites, and youth in the military. The military oversample was discontinued after 1984 and the economically disadvantaged white oversample was discontinued after 1990, leaving 9,964 of the original sample still eligible for interviewing.[2] The survey has been conducted annually in person through 1994.[3] Beginning in 1994, the survey frequency was reduced to biennial. The NLSY is renowned for its phenomenal response rate. In 1994, the sixteenth year of interviews, over 89% of the original sample (who are still eligible) were interviewed.

Data collected from NLSY respondents are used primarily for the understanding of labor market behavior. Information on jobs and their characteristics as well as unemployment spells is coupled with other variables believed to influence or be influenced by labor market behavior. These include education, training, household composition, marriage, fertility, health, income and assets. The NLSY dataset has been used extensively for a wide variety of studies and has

[2] Includes a small number of deceased respondents.
[3] The interview was conducted in-person in all years but 1987, when it was fielded by telephone.

become the premier data set in the United States for the study of labor market behavior. Along with its high response rates, the NLSY is known for its breadth of information.

II. Measurement Issues and Analyses

Several measurement issues arise in assessing the school-to-work transition. The issues take different forms including the unit of measurement, the definitions of outcomes, the nature of the data collection, etc. Each section below will address a different measurement issue, using existing analyses to demonstrate the implications for analysis. Some tentative conclusions are drawn to inform about the needs for data collection.

A. By Year out of School or By Age?: Weeks Worked and Weeks Unemployed

As youths enter the labor force, they search for jobs and often incur some time of unemployment. Successful transitions will lead to acquisition of work experience. Those who have trouble making the transition will acquire less work experience and suffer more and longer spells of unemployment. Two ways of measuring the acquisition of work experience over time can be considered. We can measure from the time the youth leaves school, capturing weeks worked each year out of school. Or we can look at youth at given ages and measure work experience obtained by each age.

Many policy makers have a notion that by a certain age, individuals have completed their transition from school and settled into the labor market. Yet it is not clear at what age that might be. In general, measuring transition by age is desirable primarily as a long-term concept. People leave school at different ages and thus have different exposures to the labor market. Dropouts leave school before graduates. Even graduates may be different ages if they began

school at different ages. For short-term analysis we would want to measure by year out of school to put everyone in the same time frame and the same exposure to the labor market. Year out of school becomes less meaningful the longer one is out of school. For longer term analysis we may want to be able to measure by age. Consider two measures: weeks worked and weeks of unemployment.

Weeks Worked

One measure of a successful transition from school to work is the total work experience acquired as captured by weeks employed. Table 1 presents the percentage of weeks employed in the first four years out of school for high school dropouts and high school graduates. As expected, high school graduates work more weeks than high school dropouts. Over the four year period, graduates work more than 52 weeks, a full year, more than dropouts. For both males and females, and for all race/ethnicities, high school graduates work more weeks than high school dropouts. For males, the difference amounts to nearly 40 more weeks worked by graduates, approximately 10 weeks per year. The difference for females is even greater at nearly 66 weeks.

Males work more weeks than females for each race and education group. Women are more likely to leave the labor force to bear and raise children. High school girls who become pregnant may drop out of high school which might partially explain the substantial difference between female dropouts and graduates.

There are substantial differences by race/ethnicity. Whites work the most weeks, followed by Hispanics, then blacks for each sex and educational status (except that white and Hispanic graduates work about the same number of weeks).

If one examines weeks worked within each year of this four year period, one finds very little variation across the years for the various educational/sex/race groups.[4] The pattern of work set in the first year is maintained for several years. It is interesting to see if the early patterns are sustained for a longer term. For longer term analysis, we may want to measure at some age. Table 2 shows the mean and median years of work experience achieved by age 30.

By age 30, high school dropouts have worked, on average, 6.8 of the possible 12 years, or 56.7% of the available time. High school graduates have worked, on average, 8.7 of the possible 12 years, or 72.5% of the time. The difference between dropouts and graduates appears to have converged somewhat, but the pattern remains the same.[5] The distributions for the two groups are very different. Nearly half of all high school graduates have worked essentially the whole time, compared with just over a quarter of high school dropouts. Conversely, nearly twice as many dropouts as graduates have worked less than half of the time. The impact is to pull the mean for high school dropouts down from the median by more than the reduction for graduates.

The distributions differ greatly by sex, particularly between the education groups. Male dropouts have worked 8.8 years compared with 4.7 for female dropouts. Male graduates have worked 9.6 years compared with 7.8 for female graduates. As can be seen, the difference across education groups within each sex is greater for women. In fact over 60% of all women dropouts have worked less than half of the time and only 3.1% have worked nearly the entire time. The numbers for women graduates are 29.3% and 36.1% respectively. For men, the

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[4] For a more complete set of tables which show weeks worked as well as other variables year by year for each of the first four years, see Pergamit (1992).

[5] In the previous analysis, individuals were followed upon leaving school and could not have returned in the next four years. Educational attainments in this analysis are defined as of the age of 30, allowing for people to have returned to school at some time.

medians nearly converge. The larger number of dropouts who have worked less than half the time pulls the mean away from the median more than for graduates.

In this analysis, all weeks worked are counted since age 18 regardless of school enrollment. This is not equivalent to the previous table which counts weeks only after leaving school. Thus measures by age are confounded by amount of exposure to the labor market. One advantage, though, of measures by age is the ability to observe if dropouts start out behind, but eventually catch up with graduates, working the same number of weeks in a year at a given age.

Veum and Weiss (1993) examined years of work experience at each age between 18 and 27. Their findings indicate that not only do the cumulative differences persist, but dropouts do not catch up with graduates at the margin. In other words, it is not the case that dropouts have fewer weeks worked in early years, but similar weeks worked in later years. Between their 26th and 27th birthdays, dropouts worked an average of 21.7 weeks while graduates worked 46.1 weeks. Women account for most of the difference, but even male dropouts worked approximately 10 weeks less than male graduates in that year.

Unemployment

Those not employed may experience unemployment or choose not to be in the labor force. The latter is more common for women than men, and particularly for women dropouts. Table 3 presents the percentage of weeks unemployed in the first four years out of school. High school dropouts spent 13.2% of the weeks unemployed compared with only 7.4% for high school graduates. The differences by sex and educational status are striking. Male high

school dropouts spent more than twice as many weeks unemployed as graduates (16.4% versus 8.0%). The difference between male and female graduates is small (8.0% versus 6.8%).

For all race/ethnicities, high school graduates spent less time unemployed than did their dropout counterparts. Within race/ethnicities, blacks had the highest rates of unemployment for either sex or educational attainment. In fact, black female high school graduates spent more time in unemployment than did white or Hispanic dropouts.

Again we can ask if these patterns persist over time and use the age concept. Table 4, based on Veum and Weiss (1993), shows that by age 27 high school dropouts have had an average of 6.2 separate spells of unemployment while high school graduates have had only 4.5. The difference is bigger for men than for women. Male high school dropouts had had 7.0 separate spells compared with 4.7 for male graduates. The comparable numbers for females are 5.3 and 4.3, respectively. Blacks have the most unemployment spells within either education group.

The same sorts of patterns exist for the number of weeks unemployed. By age 27, high school graduates have experienced 52.3 weeks of unemployment, about 10% of the available time. High school graduates have been unemployed only 34.7 weeks, 6.7% of the time. The same relationship holds between the sexes within each of the educational groups, with the difference bigger for males. Blacks spent more weeks unemployed than either whites or Hispanics.

B. When Does the Career Begin?: Working While in School

To think about the transition from school to work requires taking a broad view. In fact, the transition into the work force begins before leaving school. Many youths work while in

secondary school. Some of these jobs provide skills and training useful in developing a career. Besides these skills (or even in their absence), these jobs teach young people about the world of work. They learn that maintaining a job requires showing up at a particular time, staying until a particular time, and working continuously in between. Developing this knowledge is critical to achieving success in the labor market. Youth must also learn how to find a job: what jobs exist and where; what are the requirements of different jobs; how to search and what methods of search are useful; etc.

Table 5 presents tabulations from a paper by Ruhm (1994) on the amount of employment by high school juniors and seniors (11th and 12th grades). If we look only at the week previous to the survey date for NLSY respondents, a concept that matches the Current Population Survey[6], we find that about 42% of juniors and half of all seniors were working. For those juniors who worked, they averaged 15.5 hours of work per week; for seniors it was 18.7 hours.

Measurement based on the survey week leads to an underestimate of the percentage of high school students who work while in school. Using the event histories of the NLSY shows more work done by high school students. The percentage of students who worked at any time (at least one week) during the academic year is 63.9% for juniors and 72.6% for seniors, over twenty percentage points higher than found looking at a one-week reference period.[7] The percentage of weeks of the academic year that students were employed was 41.5% for juniors and 51.5% for seniors. This matches well with the single week measure.

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[6] The Current Population Survey (CPS) is the monthly labor force survey in the U.S. used to calculate the unemployment rate. While the CPS is done in one week of each month, the NLSY is conducted over all weeks of several months. Ruhm matches only the *concept* of previous survey week, but not the *same* weeks as the CPS.

[7] Ruhm defines the academic year as the months of October, November, February, March, April, and May. He does not count December and January in order to measure working while in school, not confounded with holiday jobs. Nor does he count September or June to avoid the overlap with summer jobs.

Those employed during the school year work a significant number of hours. For those working during the week previous to the survey date, juniors worked an average of 15.5 hours while seniors worked an average of 18.7 hours. The comparable numbers using the event histories are 18.6 hours for juniors and 23.5 hours for seniors. Again we find higher estimates from the event histories. In this case, possibly neither set of estimates is correct. The survey week estimates are affected by transitory changes in work hours which may not be typical. If the noise in the estimates is random, then the estimate would be unbiased. However, it may be that youth's hours vary in particular ways. For example, youth's hours may be generally steady at one level, but occasionally dropping for family or school conflicts. In this case, transitory changes would bias the estimate downward. On the other hand, the event histories do not pick up fluctuations of hours. They ask about usual hours worked, imputing this value over the duration of the job. The sorts of drops in hours worked described above would not be picked up at all.[8]

In summary, a substantial percentage of high school students has some employment during the school year. When they work, they work at levels of hours associated with normal part-time employment. We cannot distinguish when these hours are being worked. We can assume that many of the hours being worked are on weekends; however, a substantial amount must be worked during the school week. Of course, students also have summer jobs, which also provide them with knowledge of the world of work. Ruhm (1994) addresses summer jobs separately, but I do not discuss them here.

Light (1994) considers four definitions of when the career begins. These definitions include (1) age 16, (2) the first time an individual leaves school, (3) the point at which an

[8] A remedy might capture changes in hours worked over the life of a job. However, this is not typically done, primarily due to recall problems.

individual first becomes "permanently" employed, defined as three consecutive 52-week periods during which an individual works at least 26 weeks and averages at least 30 hours per week, and (4) the last observed exit from school. Table 6 shows the mean number of full-time work weeks accumulated between each alternative career starting date. These figures demonstrate that the choice of when to begin measuring the career highly influences the measures discussed above. A considerable amount of work took place between the different starting dates. For example, if one chooses the last time observed leaving school instead of the first time observed leaving school, one misses over two years of work for white men for both education groups. The impact is similar for white women. Because minorities have less work experience in general, the different definitions have less impact on the estimates for these groups.

C. Prospective versus Retrospective: The Pitfalls of Point-in-Time Measures

If we wish to use a cross-sectional survey to provide indicators of successful transitions, there is a problem with using the point-in-time measures they provide. This problem exists if a longitudinal survey is to be used prospectively, that is, as each wave of data are released. The analyses in this paper are primarily based on using many years of data to examine the transition retrospectively. Unfortunately, retrospective information is not feasible for generating indicators on a timely basis. Retrospective information can only tell us what happened in the past, but cannot indicate the current direction of the labor market. If we wish to use longitudinal data prospectively, then we must be aware of the pitfalls. Here, the NLSY (and other data sets) can be informative to show the areas of bias. Consider the case of measuring job tenure.

Job Tenure

Past research has found that at age 30, a substantial percentage of workers has been at their current job for a very short time, implying that they have not found a long-term, stable job.[9] The implication is questionable and demonstrates the pitfall of using a current measure. Panel A of Table 7 presents data on the number of years spent on the current job for working individuals on their 30th birthday. On average, workers have been at their current jobs for 3.8 years at their 30th birthday. The median is less, at 2.7 years. The lower median exists because of the substantial portion of individuals, 42.7%, who have been at their jobs for two years or less. It is this observation, that over two-fifths of all 30 year olds were on the first two years of a job, that lead to the notion that many 30 year olds had not found steady jobs.

Time spent on the current job is a misleading measure of whether individuals settle into a particular career. There is a fair amount of job turnover, even by the age of 30, reflecting opportunities and career advancement. This is the same problem identified earlier in the measure of number of jobs held. An alternative measure to consider is the longest job ever held by the age of 30. This figure provides a better picture of settling into a career than current tenure because it incorporates information over all ages rather than at a single age. Panel B of Table 7 shows the time spent on the longest job between an individual's 18th and 30th birthdays.

Individuals average 5 years in the job that they held the longest over these ages. Unlike the distribution for current job tenure, there is not as much bunching at the lower end of the distribution. Although the median is below the mean, it is noteworthy that there is substantial

[9] See Osterman (1992).

density at the upper end of the distribution. Over 40% of all individuals had been on a job that lasted more than 5 years.

Men differ little in time spent on the longest job by educational status. For women, high school dropouts average only 2.5 years at the longest job, which is half as long as women graduates. Although these estimates are created only for those working at age 30, many of these women may have spent more time out of the labor force and had less exposure to the opportunity to have a long-term job.[10]

D. Defining Success

Measuring weeks worked and weeks unemployed is key to providing the data necessary to determine successful transitions into the labor market. The major issue is to define success. Recently there has been a perception that many young people in the U.S. are not making smooth transitions into the labor market, moving from one dead end job to another for several years.[11] This perception is based on the fact that the number of jobs held by youth is high in the first few years after leaving school.

Yet the economics literature teaches us that it is quite expected that youth would engage in "job shopping," seeking a match for their interests and skills.[12] Moving from one short term job to another could merely reflect productive job search and in no way reflect a difficult transition. Success should not be defined by the number of jobs held but by the time it takes to find "steady" employment. But how does one define "steady" employment? We consider

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[10] The mean number of years of work experience at age 30 are 4.7 for women dropouts and 7.8 for women graduates.

[11] See, for example, Commission on the Skills of the American Workforce (1990), Osterman and Iannozzi (1993), and General Accounting Office (1993)

[12] See Johnson (1978) , McCall (1990), and Jovanovic (1979).

findings from research that has featured different definitions, beginning with the measure of the number of jobs held.

Number of Jobs Held

For any number of weeks worked, a young person may hold one or many jobs. Young people typically change jobs frequently as they seek the job that best matches their skills and interests.[13] A large number of jobs could reflect this job shopping activity or it could indicate a difficult transition into the labor market. Table 8 shows the number of jobs held from the 18th to 30th birthdays. High school dropouts and graduates have the same mean and median number of jobs by the time they are 30, with fairly similar distributions. However, the patterns are different for men and women. Male dropouts have held more jobs than graduates, 8 versus to 7.2. Femaie dropouts, on the other hand, have held fewer jobs than female graduates, 5.5 versus 6.4. The relationships of the medians are similar to those of the means.

Time Until Finding "Steady" Employment

Counting the number of jobs does not tell us how successful youths have been at entering the labor force. Hotz, et. al. (1995) examine how long it takes to enter full-time employment for young men, which they define as holding one or more jobs for 50 weeks out of a consecutive 52 week period and averaging at least 35 hours per week of work during this period. Table 9 reproduces their results by race (they did not examine separate education

[13] See Bartel (1980), Hall (1982), and Topel and Ward (1992).

groups). Blacks lag whites and Hispanics in obtaining full-time employment. Over half of each group had obtained full-time employment by age 24.

Klerman and Karoly (1994) ask, how long does it take to find a job lasting a given duration, specifically one, two, and three years? This definition is stricter than Hotz, et.al. in that it requires employment with a single employer (and longer tenures). It is less strict in that it does not have an hours requirement and can include part-time jobs. Like Hotz, et.al., their results are for men only. Table 10 reproduces their findings by age.[14]

Most young people eventually found a job lasting at least one year. Half of the high school dropouts found a job lasting at least three years by around age 27 while half of the graduates found a job lasting at least three years by around age 25. Interestingly, high school dropouts leave school earlier than graduates and have more exposure to the labor market. As a result they had more time to experience jobs lasting one, two, or three years. Yet this effect wore off quickly. Since most students graduate from high school at age 18, age 21 is the earliest high school graduates could have a job lasting three years. However a higher percentage of high school graduates than dropouts have had a job lasting at least three years by age 22. By age 29, 60.8% of high school dropouts have found a job lasting three years or more while 75.7% of high school graduates have.

Light and McGarry (1993) examine the issue yet another way. They look at whether job transitions for young men eventually lead to longer-duration jobs during the first eight years of a career. They define a career as the time since leaving school. Table 11 is based on a table from their paper. They look at job durations for each job held categorized by the number of jobs held. The first column of Table 11 shows that of those holding only one job in the first

[14] Klerman and Karoly present their results both by age and by year out of school. Only the former is reported here.

eight years of their careers, the mean job duration is 8.9 years.[15] Individuals who change jobs twice move from a job that lasts 3.3 years to one that lasts 6.3 years. Looking down any column of Table 8, we find a fairly consistent pattern of increasing mean durations. As we move along the columns we observe workers holding progressively a series of jobs lasting short durations, frequently one year or less. However, even those who held 10 jobs eventually moved into a job lasting 2.85 years.[16]

Several important distinctions appear in the different measures of success. One key difference is whether success is defined as working steadily in the labor market, regardless of the number of employers, or working steadily for a single employer. A second distinction is how long the job or employment spell must last to be considered "steady." A third distinction is whether the job(s) must be full-time or if part-time is acceptable. Other distinctions are possible; it falls upon the data providers to devise data sets that can support a variety of definitions.

Wages and Other Measures of Quality

Up to this point, I have discussed measures of successfully moving into the work force. Counting weeks worked or job tenure does not capture all the dimensions of a job. Are the jobs obtained "good" jobs? The most obvious measure of job quality is the wage rate. It is a well-established fact that higher wages are associated with higher levels of education. This is generally true for starting wages and for wage growth.

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[15] Light and McGarry count all jobs held during the first eight years of the career, but follow each of those jobs until it ends, which may be outside of the eight year period.

[16] Some of the last jobs held may be censored because they were in progress at the date of the last interview.

Light and McGarry (1993) examine the relationship between job mobility and wages for young men during the first eight years of their career. Table 12 is based on their findings. The figures show that those who held fewer jobs had higher starting wages and higher wage growth. One must be careful in interpreting these findings. We cannot distinguish whether the workers who have had few jobs have invested in job-specific skills or whether they simply found "good" jobs. On the other hand, it does appear that job mobility may be an indicator of difficulty in making a transition into a high quality job.[17]

Other measures of compensation include "fringe" benefits such as health insurance, pensions, and leave (notably vacation and sick leave). While one might associate better jobs as those offering more of these benefits, it is not clear that the absence of them implies a "bad" job, particularly for a young person. Young people are generally healthy and do not place high value on health insurance; nor do they value a pension plan paying returns several decades away. Thus we might observe young people choosing jobs that do not offer these benefits. Instead they may trade off for a higher wage or some nonpecuniary benefit such as the ability to acquire transferable skills.

III. Providing the Data for Assessing School-to-Work Transitions

What is Needed

Several issues have been raised in the previous section regarding data and definitions necessary for assessing the school-to-work transition. The charge of the statistical agency is not to define success, but to provide the data necessary for a variety of possible definitions.

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[17] The policy implications are not clear. Research by Gritz and MaCurdy (1992) indicates that participation in the labor market is the key to future success. More weeks worked early in the career, regardless of the wage, implies better outcomes later.

Insufficient research has been undertaken to date so that there is no commonly accepted definition of success. Nor is there a clear set of indicators. It therefore falls upon the statistical agency to provide the most detailed and flexible data feasible. Considering the discussion above, we can identify key elements of the necessary data set.

1. *Longitudinal data*. Several types of measures are needed, in particular cumulative measures (e.g., weeks worked) and duration measures (e.g. job tenure, time until finding a job). Repeated cross-section surveys can only provide current measures that were shown to be inadequate. Cross-section surveys may provide measures other than discussed here which may be useful in monitoring the state of youth so they should not be ruled out completely. However, it is quite clear that assessing the school-to-work transition requires longitudinal data. Longitudinal data are better for studies of transitions and durations and for creating cumulative measures.

2. *Begin with a young sample*. In the NLSY, we began with individuals 14-22 years old. Many youths in the upper age groups had left school several years before. It was not possible to observe the transition. It is important not to begin the sample with age groups above the normal transition ages. To measure the transition properly, one should begin with all sample members in ages before the transition so that all transitions can be observed. This requires beginning an entire sample at very young ages.

Starting with a young sample addresses two additional goals. First, as we saw there is considerable work being undertaken by youth in high school. We need considerably more research to understand the role of these experiences in leading to a successful transition into the labor market. Beginning with a young sample will allow us to fully observe this amount of work. It would also be useful to capture other activities that teach the same type of common

job-related knowledge such as irregular jobs held by young people as well as chores performed in the home.

Second, we need more information about youth while they are in school including what sorts of skills they are acquiring in school and how these skills translate into labor market success. We know there is a positive return to education, but we do not know what elements of that education matter most. More details are needed about what is actually learned in school.

3. *Individual based data.* Most longitudinal surveys tend to be household based. Due to cost and practicality, one person in the household is designated to respond for all other members in the household. This proxy response results in measurement error which can be substantial if the respondent has poor information about the activities of the other household members. Past research has shown that parents are not good at reporting about their children's work and job search activities.[18] The youth must be designated specifically as the sample respondent and followed over time. To obtain family background information, a separate interview should be conducted with the parent to obtain information that is probably not well reported by the youth.

4. *Event Histories.* The best way to collect information that can yield estimates of cumulative and duration measures is in event history format. Using this method, beginning and ending dates are collected for a variety of spells such as job beginning and ending dates, school enrollment beginning and ending dates, etc. Event histories reduce the seam effect problem that exists when linking up interviews from two points in time.[19]

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[18] See Freeman and Medoff (1982) and Tanur, et. al. (1992).

[19] A seam exists at the point of an interview. The effect is to find more transitions occuring across the seam than within the interview period.

Dating events can be difficult for respondents. Some dates are more salient than others; some dates are remembered with more accuracy because they are related to other events. To prevent difficult recall the reference period should be kept as short as cost considerations permit. Also, memory aids such as calendars can be employed to help link events in the mind of the respondent.

By collecting event histories, the point when a transition is made can be observed and linked to other events. In assessing the school-to-work transition, we obviously need to observe times of school enrollment and work activity. We might also want to know periods of job training, family formation (marriage and births of children), and other events that affect labor market behavior.

5. *Research Agenda.* Although not an element of the data set itself, a research agenda should be considered an integral part of the data provider's mission to inform policy makers with the information needed for assessing the school-to-work transition. Such research issues should include the role of school-provided skills in securing a successful transition, the relationship of work in school to successful transitions, the role of early post-school work experiences in later success, the amount of job change associated with choice versus necessity, the effect of schooling interruptions, the choice to re-enroll in school after time in the labor market, etc.

In particular, the research must address the relationship between the retrospective findings which reveal eventual outcomes with measures produced prospectively which are used for social monitoring. Without a clear understanding of these relationships, current measures are subject to considerable misinterpretation.

The Response in the U.S.

As we approach the 21st century, the labor market for youth has changed dramatically since what existed in the early 1980s, captured by the NLSY. At the U.S. Bureau of Labor Statistics, we are beginning a new survey of youth, NLSY96. This survey shall begin in 1996, collecting information from a sample of 12,000 adolescents ages 12-17.[20] Essentially our intention is to meet the need described above to start with a young sample. Ideally, the age range should be chosen so that all youths are observed before they make any transition into the labor force. The older youth will mostly be observed before the transition from school has occurred, but not entirely. Nor will we observe their early, pre-transition experiences. However, for the younger part of the sample, we will collect data of the sort outlined above, capturing work and other experiences before the transition. In this case, the needs of an agency that produces labor market statistics were balanced against the needs of collecting early data, producing the selected age range.

In the first year, a substantial interview will be conducted with the youth's parent to collect family background and history of the youth (e.g. residence history and schooling history). We will maintain the event history format used in the NLSY and expand it to areas we had not previously collected using that format. Several areas of investigation shall be expanded based on our knowledge of holes in the literature. Having an active research agenda, promoted both within the agency and in the research community, we have discovered what we do not know. This survey, in particular, will attempt to gather more information than previous surveys on what skills are obtained in school. It will also focus on the experiences in early adolescence that predate labor market activities, but contribute to human development which influences eventual economic outcomes. This survey, I believe, holds significant promise for

[20] Specifically, they will be 12-17 as of January 1, 1996; some will have turned 18 by the time they are interviewed.

understanding what makes for a successful transition from school to work and into adulthood...if only we can define success!

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Table 1: Percent of Weeks Spent Employed in the First Four Years After Leaving School for 16-19 Year Olds Who Left School Between 1977-1981 by Race, Sex, and High School Completion.

	Percent of Weeks Employed		
	Total	Male	Female
H.S. Dropout	52.6	65.1	40.4
Hispanic	49.3	62.2	33.3
Black	37.4	54.5	18.6
White	57.3	68.8	46.8
H. S. Graduate	77.9	84.3	71.9
Hispanic	77.1	85.6	67.5
Black	66.1	75.9	57.3
White	79.6	85.3	74.2

Source: National Longitudinal Survey of Youth; Tabulated by the Center for Human Resource Research at the Ohio State University for the Bureau of Labor Statistics.

Table 2: Years of Work Experience from 18th to 30th Birthdays.

Characteristic	Mean	Median	Distribution in years (in percent)			
			0-6	7-8	9-10	11-12
Total						
High school dropouts	6.8	7.3	37.9	16.1	19.2	26.8
High school graduates	8.7	9.9	20.5	11.3	19.7	48.5
Male						
High school dropouts	8.8	10.6	17.4	14.8	19.7	48.1
High school graduates	9.6	10.7	11.9	7.2	20.3	60.6
Female						
High school dropouts	4.7	4.6	60.6	17.6	18.7	3.1
High school graduates	7.8	8.6	29.3	15.5	19.1	36.1

Source: National Longitudinal Survey of Youth
From "Work and Family: Turning Thirty -- Job Mobility and Labor Market Attachment"
U.S. Department of Labor, Bureau of Labor Statistics
Report 862, December 1993

Table 3: Percent of Weeks Spent Unemployed in the First Four Years After Leaving School for 16-19 Year Olds Who Left School Between 1977-1981 by Race, Sex, and High School Completion.

	Percent of Weeks Unemployed		
	Total	Male	Female
H.S. Dropout	13.2	16.4	10.1
Hispanic	12.3	16.5	7.2
Black	18.4	19.5	17.2
White	12.0	15.5	8.8
H. S. Graduate	7.4	8.0	6.8
Hispanic	5.7	6.6	4.7
Black	13.1	12.6	13.6
White	6.7	7.5	6.0

Source: National Longitudinal Survey of Youth; Tabulated by the Center for Human Resource Research at the Ohio State University for the Bureau of Labor Statistics.

Table 4: Average Number of Unemployment Spells and Weeks Unemployed Since Age 18, by Worker's Age, Educational Attainment, sex, and race or Hispanic origin, January, 1, 1978 - 90.

	Age of Worker									
Unemployment Spells	18	19	20	21	22	23	24	25	26	27
Less than high school	2.5	3.4	4.0	4.7	5.2	5.5	5.9	6.1	6.2	6.2
Men	2.9	3.9	4.6	5.4	6.0	6.5	6.9	6.9	7.0	7.0
Women	2.1	2.7	3.3	3.7	4.1	4.4	4.7	5.0	5.1	5.3
White	2.7	3.6	4.2	4.8	5.3	5.6	5.9	6.0	6.0	6.1
Black	2.0	2.8	3.5	4.1	4.6	5.1	5.6	6.2	6.4	6.4
Hispanic	2.2	3.1	3.7	4.4	5.0	5.6	6.0	6.4	6.6	6.6
High school graduate	1.9	2.5	3.0	3.4	3.8	4.1	4.4	4.5	4.5	4.5
Men	1.9	2.5	3.1	3.5	3.9	4.3	4.6	4.6	4.7	4.7
Women	1.9	2.5	3.0	3.4	3.7	4.0	4.2	4.3	4.3	4.3
White	1.8	2.4	2.8	3.2	3.6	3.9	4.1	4.2	4.2	4.2
Black	2.3	3.0	3.8	4.3	4.9	5.4	5.8	5.9	6.1	6.1
Hispanic	2.3	3.0	3.7	4.2	4.6	5.1	5.4	5.5	5.7	5.7
Weeks Unemployed										
Less than high school	8.4	16.7	24.1	30.6	36.2	40.4	43.3	46.5	50.6	52.3
Men	10.4	21.0	30.6	38.9	45.8	50.8	54.1	56.6	61.5	62.6
Women	5.8	11.3	15.8	20.0	44.2	28.0	30.6	34.1	37.8	41.9
White	8.4	16.5	23.4	29.6	34.6	38.3	40.6	42.2	45.4	44.9
Black	7.9	16.7	24.5	32.0	39.6	45.2	49.9	57.7	61.3	73.7
Hispanic	8.6	17.7	26.5	33.3	39.9	45.2	49.2	55.4	61.3	63.3
High school graduate	5.7	11.1	15.6	20.0	23.7	26.6	29.0	30.9	32.6	34.7
Men	5.9	11.9	17.5	22.2	26.4	29.5	32.4	34.2	36.3	38.2
Women	5.6	10.3	14.1	17.7	21.1	23.8	25.8	27.6	29.1	31.2
White	5.1	9.7	13.8	17.5	20.7	23.0	25.0	26.6	28.1	30.2
Black	9.3	18.5	26.1	32.5	38.8	44.4	49.1	52.6	55.2	54.8
Hispanic	7.2	14.8	21.2	26.8	32.6	36.7	40.8	43.9	49.9	53.1

Source: National Longitudinal Survey of Youth
From: Jonathan R. Veum and Andrea B. Weiss, "Education and the work histories of young adults"
MONTHLY LABOR REVIEW, April, 1993
U.S. Deparment of Labor, Bureau of Labor Statistics

Table 5: Frequency and Amount of High School Employment.

	11th Grade	12th Grade
Employment status in week prior to survey date		
Percent working	43.3%	50.8%
Avg. hours/week if employed	15.5 hrs	18.9 hrs
Academic year employment (from work history)		
Percent employed at least 1 week	64.9%	73.4%
Percent of weeks employed	42.6%	52.3%
Avg. hours/week if employed	18.9 hrs	23.5 hrs

Note: Academic year employment status calculated for 26 week periods covering the months of October, November, February, March, April, and May of the relevant survey years.

Source: National Longitudinal Survey of Youth
From: Christopher J. Ruhm, "High School Employment: Consumption or Investment"
U.S. Department of Labor, Bureau of Labor Statistics
Discussion Paper, Report: NLS94-19

Table 6: Mean Number of Full-Time Work Weeks Accumulated Between Alternative Career Starting Dates (SD).

	Highest Grade Attended at Second SD	SD16 to SD1	SD16 to SDP	SD16 to SDL	SD1 to SDP	SD1 to SDL
White Men	8-11	26.3	55.0	44.4	39.7	123.0
	12	40.8	69.3	58.6	45.3	167.8
Nonwhite Men	8-11	18.2	60.8	27.4	49.4	64.2
	12	31.4	61.5	45.3	40.3	104.2
White Women	8-11	19.1	56.1	34.8	45.8	142.3
	12	31.5	60.3	47.4	39.1	142.0
Nonwhite Women	8-11	11.2	51.9	20.4	44.5	45.2
	12	19.4	57.4	37.0	42.5	135.1

Note: Full-time work weeks are cumulative hours worked divided by 40. Means are computed for individuals for whom the two starting dates are defined and unequal.

Note: SD16 = Career starts at age 16.
SD1 = Career starts when first observed leaving school.
SDP = Career starts when first obtain a permanent job.
SDL = Career starts when last observed leaving school.

Source: National Longitudinal Survey of Youth
From: Audrey Light, "Measuring Labor Market Experience: When does the the Career Begin?" (1994)

Table 7: Job Tenure by Age 30.

Characteristic	Mean	Median	Distribution of years (in percent)						
			1 or less	1-2	2-3	3-4	4-5	5-6	More Than 6
Years spent on current job among those employed at age 30									
Panel A	3.8	2.7	25.3	17.4	10.7	7.8	7.2	6.3	25.3
Years spent on longest job held from 18th to 30th birthday									
Panel B									
Total **	5.0	4.4	5.4	9.6	13.8	16.0	13.6	10.7	30.9
High school dropouts	3.9	3.1	18.6	13.3	13.1	12.9	12.4	9.4	20.3
High school graduates	5.3	4.6	6.0	10.9	14.1	12.9	11.5	8.6	36.3
Male									
High school dropouts	5.2	4.5	8.4	8.8	13.5	14.1	9.2	13.9	32.1
High school graduates	5.6	4.7	4.1	7.4	15.1	14.4	12.4	8.3	38.3
Female									
High school dropouts	2.5	2.2	29.7	18.4	12.7	11.6	16.0	4.4	7.2
High school graduates	5.0	4.3	7.9	14.6	13.2	10.7	10.5	8.8	34.3

Note: The 1-2 year category implies that an individual spent more than 1 year and less than or equal to 2 years on the current job. The other categories are defined similarly.

** These totals are for all educational attainment groups, including those with some college and college graduates.

Source: National Longitudinal Survey of Youth
From: "Work and Family: Turning Thirty -- Job Mobility and Labor Market Attachment"
U.S. Department of Labor, Bureau of Labor Statistics
Report 862, December 1993

Table 8: Number of Jobs Held from 18th to 30th Birthdays.

Characteristic	Mean	Median	Distribution in years (in percent)			
			0-3	4-6	7-9	10 or more
Total						
High school dropouts	6.8	6.0	24.7	31.1	20.0	24.2
High school graduates	6.8	6.0	23.8	31.3	24.4	20.5
Men						
High school dropouts	8.0	7.0	16.7	31.0	17.2	35.1
High school graduates	7.2	6.0	22.4	28.7	23.8	25.1
Women						
High school dropouts	5.5	5.0	33.5	31.4	23.2	11.9
High school graduates	6.4	6.0	25.2	34.0	24.9	15.9

Source: National Longitudinal Survey of Youth
From "Work and Family: Turning Thirty -- Job Mobility and Labor Market Attachment"
U.S. Department of Labor, Bureau of Labor Statistics
Report 862, December 1993

Table 9: Percent Who have Already Achieved First Full-Time Work Spell by a Particular Age: For Young Men, age 13-16 in 1978.

	Age											
	16	17	18	19	20	21	22	23	24	25	26	27
Hispanics	1.76	4.50	8.61	14.87	23.87	33.66	45.21	55.19	64.77	71.39	75.95	79.58
Blacks	1.00	1.38	3.14	7.53	13.68	20.45	30.87	40.78	54.33	59.08	62.93	68.00
Whites	1.66	3.95	7.19	14.23	22.85	31.94	41.82	52.57	63.87	74.00	79.55	83.50

Source: National Longitudinal Survey of Youth
From: Hotz et al., "The Returns to Early Work Experience in the Transition from School to Work for Young Men in the U.S.: An Analysis of the 1980s" (1995)

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Table 10: Percent of Men Ever In a Job Since Leaving School, by School-leaving Group, Duration of Job, and Age.

School - leaving group and age	Duration of longest job ever held		
	1 year	2 years	3 years
High School Dropouts:			
16	0.0	0.0	0.0
17	2.1	0.0	0.0
18	11.9	1.2	0.0
19	27.5	5.7	0.8
20	49.0	13.7	2.8
21	63.2	28.6	7.5
22	72.2	39.1	18.4
23	77.4	46.6	26.0
24	81.9	54.1	32.4
25	86.4	61.4	40.1
26	90.0	66.2	47.1
27	91.8	70.3	52.7
28	93.7	73.7	56.8
29	93.8	75.6	60.8
High School Graduates			
16	0.0	0.0	0.0
17	0.0	0.0	0.0
18	0.1	0.0	0.0
19	14.2	0.1	0.0
20	47.3	7.3	0.1
21	67.4	27.4	5.2
22	77.1	41.8	19.7
23	84.9	53.4	30.5
24	90.5	63.7	41.3
25	94.3	70.9	49.9
26	95.9	77.4	57.0
27	98.2	83.4	63.6
28	98.6	87.1	70.1
29	98.6	89.0	75.7
30	99.2	91.7	79.5

Source: National Longitudinal Survey of Youth
From: Jacob Alex Klerman and Lynn A. Karoly,
"Young men and the transition to stable employment"
MONTHLY LABOR REVIEW, August 1993
U.S. Department of Labor, Bureau of Labor Statistics

Table 11: Mean Duration of Each Job Held During First Eight Years of Career.

Job Number	1	2	3	4	5	6	7	8	9	10
1	8.90	3.29	1.73	1.60	1.13	1.01	0.84	0.76	0.56	0.58
2		6.28	2.32	1.79	1.21	1.00	0.77	0.77	0.51	0.48
3			5.06	2.09	1.32	1.04	0.88	0.68	0.67	0.43
4				4.15	1.35	1.33	0.92	0.98	0.80	0.67
5					3.87	1.46	1.27	0.87	0.70	0.74
6						3.50	1.21	0.73	0.81	0.65
7							3.33	1.03	0.94	0.68
8								3.34	1.02	0.86
9									3.24	0.86
10										2.85

Source: National Longitudinal Survey of Youth
From: Audrey Light and Kathleen McGarry, "Job Change Patterns and the Wages of Young Men" (1993)

Table 12: Wage Changes During First Eight Years of Career.

	Total Jobs Held					
Variable	1	2-3	4-5	6-7	8-10	1-10
Initial ln(wage)	1.66	1.63	1.53	1.52	1.50	1.54
Final ln(wage)	2.20	2.06	1.91	1.88	1.83	1.91
Change in ln(wage)	0.53	0.42	0.38	0.37	0.33	0.37

Note: Initial and final wages are observed at approximately .5 and .8 years of potential experience. Wages are natural logarithms of CPI-deflated average hourly values expressed in 1982 dollars.

Source: National Longitudinal Survey of Youth
From: Audrey Light and Kathleen McGarry, "Job Change Patterns and the Wages of Young Men" (1993)

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